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Investigating Novice Translators' Instrumental Competence in Translating from and into a Foreign Language

Nantana Sittirak[a,*], Sirirat Na Ranong[b]

[a] nantana.sit@dome.tu.ac.th, Faculty of Liberal Arts, Thammasat University, Thailand
[b] sirirat.n@arts.tu.ac.th, Faculty of Liberal Arts, Thammasat University, Thailand
[*] Corresponding author, nantana.sit@dome.tu.ac.th

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ABSTRACT

Instrumental competence is universally considered a compulsory competence for translators. Given its significance, this study investigated the instrumental competence of novice translators in translating from and into a foreign language. To this end, an experiment was conducted with a group of 31 Thai EFL learners who had taken English-Thai Translation and Thai-English Translation courses. Data was collected using recordings of the participants' on-screen translation activities, their translated texts in English and Thai, a pre-translation questionnaire, a post-translation questionnaire, interviews, and direct observations. Not only did the results of the research confirm the growing popularity of electronic translation resources, particularly Machine Translation (MT), but they also revealed that the number of resources used, the total time taken for searches, the number of searches carried out, and the variety of searches carried out did not contribute to the acceptability of the solutions to translation problems. Regarding directionality, various aspects of translating into a foreign language demanded a higher use of translation resources. These results indicated that instrumental competence consists of the translator's knowledge of translation resources and their ability to use them. Consequently, this study proposes that translation teachers and institutions develop novice translators' instrumental skills to prepare them for the translation market where the expert use of modern-day resources and the ability to translate texts accurately, regardless of directionality, are required.

Keywords: instrumental competence, translation competence, novice translators, translation

Introduction

Translation activities have increased dramatically since the late twentieth century due to economic globalization and international political activities driven by international bodies such as the United Nations and the European Union, resulting in a growing demand for translators and interpreters (Chang, 2009). Today, the translation industry is worth billions of dollars (Bowker, 2023). In response to these demands, translation and interpretation programs have been established worldwide (Venuti, 2017), and this trend is on the rise (Hatim, 2014).

Traditionally, translation teaching is more related to teacher-oriented and product-oriented approaches in which the teacher acts as a knowledge transmitter, and translation errors and scores are strictly monitored to attain the highest possible quality in the final product. Today, however, translation teaching is inclining more towards student-oriented and process-oriented approaches in which the translation process is as equally important as the translation product, while the students' translation competence is developed (Colina & Venuti, 2017; Riabroi, 2016). Unlike the traditional approaches, these approaches examine the students' planning, problem-solving, and monitoring, as well as revision skills (Riabroi, 2016) because they impact the quality of the final product (PACTE, 2017). With these approaches, Aubakirova (2016) argues that not only is the final product assessed to determine translation quality, but the translators' translation competence is also developed through the translation training process and assessed to ensure they are qualified for the translation profession. Recognizing the significance of these approaches, more universities worldwide are providing translation courses, programs, and training geared towards training students who are novice translators to become professional translators (Aubakirova, 2016; Bowker, 2023), and are incorporating competency-based courses into their programs (Alshargabi & Abdu Al-Mekhlafi, 2019). These competency-based approaches, according to Kelly (2010), aim to minimize the gap between education and market demand.

Translation competence (TC) was first introduced to the translation studies discipline in the mid-1980s and has attracted widespread interest since the 1990s (Hurtado Albir, 2015). Since its introduction, although TC has been described broadly, there is a consensus among translation scholars that it is not merely possessing language skills (Aubakirova, 2016; PACTE, 2000; Schäffner & Adab, 2000). As a result, attempts to construct TC models have been made by TC academics to create benchmark for curriculum design, the translation job market, and self-development for competent translators (Hurtado Albir, 2017). Among the constructed models, PACTE's TC model is perhaps the most recognized based on its sequence of development. According to PACTE (2003), TC consists of strategic, bilingual, extra-linguistic, knowledge of translation, and instrumental sub-competences, as well as psycho-physiological components. Göpferich (2009) worked with the TRANSCOM research group to develop a TC model comprised of a similar set of constructs, including communicative competence in at least two languages, domain competence, tools, and research competence, translation routine activation competence, psychomotor competence, and strategic competence. Another well-known TC model was developed by the European Master's in Translation (EMT) for academic and professional purposes. This model incorporates five sub-competences: language and culture, translation, technology, personal and interpersonal, and service provision (Toudic & Krause, 2017). Based on these models, TC is distinctly comprised of more than one sub-competency, and according to Eser (2014), the incorporation of TC into translation syllabi enables students to be aware of differences between bilingual competence and TC, as well as the sub-competences required in the translation profession.

Of all the sub-competences, instrumental competence appears in all of the TC models. Called in PACTE's (2003) TC model, instrumental sub-competence is defined as the knowledge and skills to use documentation sources and information and communication technologies to facilitate the translation process. In addition to the strategic and knowledge about translation sub-competences, instrumental sub-competence is a requisite characteristic for professional translators.

Since translators are unavoidably involved with using dictionaries and other reference resources, the effectiveness of translation resource usage differentiates professional translators from novice translators (Hatim, 2014). Today, the competence in using translation tools and resources is not limited to using dictionaries and other written materials, but also covers using electronic and online resources, which have become an integral part of professional translators' work routines (Kuznik & Olalla-Soler, 2018). As we are now at the forefront of technological developments, it is likely that those who plan to work in the translation profession will have to acquire even greater competency using advanced tools like ChatGPT, the newly-developed AGI (artificial general intelligence), which are likely to outperform machine translation (OpenAI, 2023, March 26). Thus, due to technological advancements, it will be interesting to see what the future holds for translation resources and the translators' competence in using them.

Given the significant role of instrumental competence, research has been conducted to explore this competence in novice and professional translators, for example, as in PACTE's TC studies which were conducted with six European language pairs (Hurtado Albir, 2017). Despite the existing studies, little has been explored concerning the instrumental competence of novice translators in translating from and into a foreign language, particularly the English-Thai, and Thai-English language pairs. Furthermore, since the opening of translation programs in Thailand, more emphasis has been placed on linguistic issues in translations rather than on TC (Kazuharu, 2017). Therefore, it will be interesting to investigate novice translators' instrumental competence in the two language pairs quantitatively and qualitatively. By exploring their quantitative and qualitative behaviors in using translation resources in the Thai context, a comprehensive picture of their instrumental competence will be obtained. Not only will the results of this research yield positive contributions directly to stakeholders in translation pedagogy, including novice translators, translation training institutions, programs, and teachers in designing translation courses and strategies to strengthen their students' instrumental competence, but they will also provide the translation studies discipline with broader insights into TC, particularly about these under-researched language combinations.

Review of Literature

Instrumental Competence

Instrumental competence can briefly be described as a translator's knowledge and ability to use both printed and electric formats of the tools in the translation process, and many TC researchers consider it a must-have competence that constitutes a translator's TC (Göpferich, 2009; PACTE, 2003; Toudic & Krause, 2017). Given its pivotal role in the translation profession, numerous studies have been conducted to explore the instrumental competence of novice and professional translators. PACTE (2003), for example, conducted research to validate its TC model on a language teacher group and a translator group who used Catalan or Spanish as their mother tongues and English, French, and German as the paired foreign languages. The results revealed that the translator group outperformed the teacher group, particularly when they combined their internal support with the use of monolingual resources. This result implies that instrumental competence contributes to translation quality, complements internal support, and most importantly, is an indispensable quality of professional translators. Another interesting result from this research was that, when translating into a foreign language, both groups used translation resources more frequently. This suggests that translating into a foreign language is perhaps more complex and difficult, hence requiring the translator to have greater instrumental competence. A more recent study was conducted by Kuznik (2017), as part of the PACE team, about TC acquisition. The study discovered that the teacher and translator groups used translation tools for a wider variety of searches when translating into a foreign language. These results confirm that the greater the variety of searches, the better the translation scores were for both groups, particularly

in the translator group. According to these results, the degree of instrumental competence certainly differs between language pairs.

Additional TC research was conducted in the Thai context by Riabroi (2016), who implemented a team-based learning module to develop students' TC. In her study, a group of English majors was given English-Thai and Thai-English translation tasks and projects in a 15-week translation class to work on in groups and individually, with access to all kinds of translation resources. The results revealed that when given the choice, most students favored Internet resources and online dictionaries over paper dictionaries and that they gained more confidence in using the translation resources compared to their previous translation course. Additionally, they learned how to use each resource more effectively, for example, how to search for information about certain text types or find the most reliable data more efficiently. Her study indicates that modern translation resources are not restricted to printed materials and that online resources are playing an increasingly significant role in translation activities. Although her study did not examine the differences between the students' use of translation resources in English-Thai translation and Thai-English translation, it successfully provided evidence of the improvement of all competencies, including instrumental competence, after the course. This, as a result, suggests that with proper guidance and well-designed courses and activities by the teacher, students' instrumental competence can develop over time. In Wongranu's (2017) study on errors in Thai-English translations made by English majors, Thai EFL students struggled to translate texts from Thai into English, thus causing syntactic or semantic errors. To avoid making errors in the Thai-English translation, Wongranu provided several suggestions for translation teachers, one of which was teaching students information-searching and dictionary skills. These skills are unquestionably part of instrumental competence. While it is uncertain whether instrumental competence can always guarantee translation quality, it clearly assists translators in obtaining linguistic, and extra-linguistic knowledge, knowledge of translation, and strategies to solve translation problems (Kuznik & Olalla-Soler, 2018). According to these studies, translation resources assist translators in the translation process, and instrumental competence varies between language combinations. Unlike the existing studies, this study aims to explore this competence more deeply in a group of novice translators of the English-Thai and Thai-English language pairs, hence providing a more comprehensive picture of instrumental competence in a wider context.

Methodology

Research Approach

This mixed method research centered on the instrumental competence of Thai EFL students, who were novice translators, and focused on their English-Thai and Thai-English translation competency.

Research Context and Participants

This research was conducted in Thailand where translation courses are commonly incorporated into curricula in English degree programs (Suksiripakonchai, 2017). The researchers used purposeful sampling (Creswell, 2012) to select an English program at a Thai university as the setting since it offered courses both in English-Thai translation and Thai-English translation for EFL students. Selecting a single setting ensured that the setting was in a controlled condition and that the participants possessed homogenous attributes. A total of 31 fourth-year students in this program volunteered to participate, hence there were 31 participants (n= 31). As this research also aimed to discover the relationships among variables, having at least 30 participants was suitable for quantitative analysis that involves detecting correlations (Creswell, 2012). Regarding the participants' attributes, all of the participants were in the same year of study, had taken the same number of English and translation courses, and had neither professional translation experience

nor had obtained translation certificates, hence confirming their homogenous attributes and status as novice translators. Before beginning the recruitment of the participants, this research project was granted approval by the Human Research Ethics Committee (No. 2) of Thammasat University, Thailand for collecting data on human participants according to Approval Certificate No. 099/2563.

Research Instruments

In TC studies, particularly ones about the translator's translation process, the use of multiple instruments for data triangulation is highly recommended by researchers, such as PACTE (2009) and Riabroi (2016), to obtain complete, accurate, and reliable data. In this research, six instruments were used, and their purposes are presented in detail as follows:

1. The pre-translation questionnaire was given to the participants to ensure their profiles corresponded to the scope of this study. All participants confirmed their program of study, their year of study in the program, and their enrolment in the English-Thai and Thai-Translation courses, in which they were trained to use both printed and electronic resources.
2. An English text and a Thai text were given as translation tasks.

2.1 An English text about "The British Museum" was excerpted from the Secret London page. While numerous translation problems appear throughout the entire text, five parts of it were selected to represent particular problems, called "Rich Points" (RPs) in PACTE's (2003) research. These RPs posed challenges to the translators and revealed how they used translation resources to solve them. In this English text, the five RPs represented linguistic problems, textual problems, problems of intentionality (difficulty in understanding information in the source text), and extralinguistic problems, e.g., their background knowledge about the British Museum.

2.2 A Thai text about "Museum Siam: Discovery Museum" was excerpted from the Museum Thailand page. Like the English text, five parts within the text were selected to pose particular challenges to the participants.

3. The Camtasia screen recorder was used to record the translation process of the participants when translating from and into a foreign language.
4. An observation form was used to record the participants' behaviors during the translation process, particularly regarding the use of printed dictionaries that could not be captured online. To avoid ethical problems, the direct observation in this study was overt. That is, the participants were aware that they were being observed although the researchers' presence was behind them and did not interfere with their translation process.
5. The post-translation questionnaire was intended for drawing out data on the participants' translation process, the list of the translation resources they used, the purposes of their use, their translation problems, and their solutions to the problems.
6. The interview guide was designed for a retrospective interview with each subject after they had completed the post-translation questionnaire.

Analysis Framework

This study adopted PACTE's (2003) TC model as its analysis framework. It is one of several models that have been developed from experimental research (Hurtado Albir, 2017) and that explore the communicative functions of texts, as well as the cognitive processes of the translator (Károly, 2011). However, it is the most holistic, comprehensive, and dynamic one by far (Aubakirova, 2016). Moreover, PACTE's methodology and experimental design can be implemented and repeated in other experiments (Neunzig, 2017).

Data Collection and Analysis

The data collection of this research was comprised of three following stages.

1. In the pre-translation stage, the instruments were tested in two pilot studies. In the first pilot study, they were tested with six volunteers. After that, the instruments were revised and sent to three experts to determine their content validity using the index of item objective congruence (IOC). After this process, several of the instruments were revised again, and all instruments were retested in the second pilot study with 11 volunteers. Regarding the length of the translation test, the volunteers did not report issues related to exhaustion, provided that they were given a short break between each translation task and before their interviews. After the instruments were validated, contact was made with an English program to recruit participants. At this stage, the pre-translation questionnaire was sent to volunteers to ensure their homogenous attributes. Contact was also made with three raters, who were translation teachers and had taught translation for more than five years at three Thai universities, to rate the participants' translated tasks regarding the acceptability level of their solutions to the RPs. To rate the acceptability level, PACTE's acceptability criteria (PACTE, 2017) were used, with a score of 1, 0.5, or 0 given to each RP. An RP score of 1, 0.5, or 0 means the translation's acceptability level is acceptable, semi-acceptable, and not acceptable, respectively.

2. During the while-translating stage, each participant was seated in the university's library and given a computer with Internet access which had the Camtasia screen-recording program installed to capture their on-screen activities, including the orientation, development, and revision stages. According to Hurtado Albir et al. (2017), the orientation stage starts as soon as translators are given a translation task and continue until they start writing their translation. The development stage lasts from when they start writing their translation until they finish writing it. The revision stage begins when they finish writing the translation and ends when they decide they have completed the task. The Camtasia recorder is, thus, useful for recording a translator's online activities, which cannot be recorded by other instruments.

A set of printed bilingual and monolingual dictionaries were also provided at the test site, and the use of these resources was noted through direct observation by the researchers. The participants had 90 minutes to complete each translation task, which was followed by completing a post-translation questionnaire, which took another 15 minutes. There was a 5-minute break between each task, and another 5-minute break before the interview.

3. In the post-translation stage, an interview was conducted immediately after the completion of the post-translation questionnaire.

The while-translation test and the post-translation test stages lasted approximately four hours for both tasks combined.

Regarding data analysis, this study analyzed both qualitative and quantitative data drawn from the instruments. The numerical data for the quantitative analysis was mainly drawn from the Camtasia recordings of the participants' use of online translation resources and the acceptability levels of their RPs before using the SPSS software to calculate the percentages, means, standard deviations, and relationships between variables (measured by Pearson's Correlation Coefficients). The non-numerical qualitative data was drawn from the post-translation questionnaires, the Camtasia recordings, and the observation forms, as well as the interviews before being analyzed using content analysis to determine the participants' instrumental competence.

Results

In this section, results demonstrating the novice translators' instrumental competence are presented in three sub-sections: their use of electronic resources and printed resources, the characteristics of their use of resources, and the relationship between their instrumental competence and the acceptability of their solutions to translation problems.

The Use of Electronic and Printed Resources

The novice translators' use of translation resources when translating from and into a foreign language was reported in terms of the types and number of resources used in Tables 2 and 3.

Table 1

Types and Number of Resources Used When Translating from a Foreign Language

Resources	Min	Max	Mean	SD	Frequency	Rank
Search engines	0	3	1.32	0.702	41	1
Google					21	
Microsoft Bing					12	
Google Images					5	
Microsoft Bing Images					2	
MT	0	2	1.06	0.359	33	2
GT					26	
BT					4	
I Love Translation					2	
Baidu					1	
General dictionaries	0	4	0.87	0.957	27	3
Monolingual					9	
Bilingual					18	
Others	0	1	0.65	0.486	20	
Spelling checkers						
MS Word spelling checker					20	
Websites	0	3	0.65	0.950	20	
travel.mthai.com					4	
Tripadvisor					1	
Talontiew.com					2	
www.rmg.co.uk					1	
www.matteoconverter .com					2	
Pantip					2	
the.glosbe.com					1	
britishmuseum.org					1	
sanook.com					1	
hands-on.co.th					2	
thailibrary.in.th					1	
mpehl.org					1	
Facebook page					1	
Encyclopedias	0	1	0.26	0.445	8	
Wikipedia					8	
Laptop calculator	0	1	0.03	0.180	1	
Total	1	12	4.84	2.282	150	

*MT = Machine Translation, GT = Google Translate, BT = Bing Translator

According to Table 1, seven types of electronic resources were used, altogether accounting for approximately 150 instances of use when translating from English into Thai. Search engines, MT, and general dictionaries ranked as the top three in terms of popularity. Search engines were

used 41 times, with Google being the most popular. The second most popular resource type was MT, which includes GT, BT, I Love Translation, and Baidu. Another popular electronic resource type among the participants was general dictionaries; among these, bilingual dictionaries were used twice as often as monolingual dictionaries.

Based on observations, only eight participants used printed resources in addition to electronic ones in the development stage, and two of them used printed resources early in the orientation stage. The printed resources were usually used following the use of an online monolingual dictionary and GT to ensure the accuracy of the definitions of some words provided by the online dictionary and some of the words used in the GT translation. None of the participants appeared to use printed resources, and eleven of the participants exclusively used electronic resources in the revision stage. Similarly, the interview revealed information about the popularity of electronic resources among the participants, including MT (GT in particular), Google, and online bilingual and monolingual dictionaries.

Table 2

Types and Number of Resources Used When Translating into a Foreign Language

Resources	Min	Max	Mean	SD	Frequency	Rank
Websites	0	7	1.45	1.729	45	1
Tripadvisor					2	
www.museumsiam.org					13	
www.digitalschool.club					3	
www.bia.co.th					1	
Pantip					3	
museumsiamthailand.com					3	
hotels.com					1	
thedaytonmagazine.com					1	
bkkartbiennale.com					1	
glosbe.com					1	
jstor.org					1	
www.bangkokpost.com					1	
painaidee.com					1	
oknation.nationtv.tv					1	
www.ef.co.th					1	
musuem.ms					3	
museumlc.mahidol.co.th					1	
10best.com					1	
contentshifu.com					1	
db.sac.co.th					1	
okmd.or.th					2	
autoinfo.co.th					1	
sites.google.com					1	
MT	1	3	1.42	0.672	44	2
GT					27	
BT					7	
I Love Translation					5	
แปลไทยเป็นอังกฤษ.com					2	
Right Click Translate (MS Word)					1	
Baidu					1	
thai-translator.net					1	
Search engines	0	3	1.23	0.560	38	3
Google					24	
Microsoft Bing					12	
Google Images					2	

General dictionaries	0	3	0.74	0.815	23
Monolingual					6
Bilingual					16
Synonym					1
Others	0	1	0.74	0.445	23
Spelling checkers					
MS Word spelling checker					23
Grammar checkers	0	2	0.71	0.693	22
Grammarly					14
www.reverso.net					3
languagetook.org					1
grammarcheck.net					4
Encyclopedias	0	8	0.68	1.447	16
Wikipedia					16
Total	3	19	6.97	3.167	211

*MT = Machine Translation, GT = Google Translate, BT = Bing Translator

According to Table 2, seven types of resources were used in the task translating Thai into English. These resources were used 211 times, with the top three popular types including websites, MT, and search engines. Websites and MT were used almost at the same frequency, indicating a similar popularity among participants in translating into a foreign language. The websites that the participants accessed were mainly used to search for background knowledge and parallel texts, the most popular of which was the Museum Siam website. Regarding the use of MT, GT's popularity soared dramatically, unlike the rest of the MT options. The third most popular resource type was search engines, with Google being the most frequently used. The results also revealed that grammar checkers were frequently used in the Thai-English translation process.

Based on observations, only two participants used both printed electronic resources, suggesting that electronic resources are more popular for translating into a foreign language. Moreover, the use of printed resources by the two participants occurred in the development stage. Similarly, the interview results revealed the electronic resources' popularity among the participants as they ranked MT (GT in particular), Google (as a search engine), and grammar checkers as the most useful resources.

Characteristics of the Use of Resources When Translating from and into a Foreign Language

The characteristics of the novice translators' use of resources when translating from and into a foreign language were reported in terms of the total time taken for searches in Table 3, the number of searches carried out in Table 4, the variety of resources used for translating from a foreign language, or into a foreign language in Tables 5 and 6, respectively.

Table 3

The Total Time Taken for Searches in the Translation Process

Language Pairs	Min	Max	Mean	SD
English-Thai	0:0:56	0:08:10	0:04:03	0:02:00
Thai-English	0:0:10	0:16:13	0:04:42	0:03:40

*Data reported in hours, minutes, and seconds

Table 3 revealed that the total time taken for searches when translating from a foreign language by novice translators was slightly less than the total time they took for searches when translating into a foreign language. While performing the English-Thai translation, their average search time was 4.03 minutes, and the average search time of 4.42 minutes when doing the Thai-English translation. Although this difference was minimal, the maximum total time spent on searches in the Thai-English translation process was twice as high as the maximum total time spent on searches in the English-Thai translation process. This, therefore, implies that translating into a foreign language requires a greater use of instrumental competence.

Table 4

The Number of Searches Carried out in the Translation Process

Language Pairs	Min	Max	Mean	SD
English-Thai				
Orientation stage	0	5	0.84	1.594
Development stage	4	29	10.42	6.480
Revision stage	0	3	0.35	0.798
Total	4	32	11.61	6.647
Thai-English				
Orientation stage	0	5	0.16	0.898
Development stage	3	30	13.74	7.151
Revision stage	0	7	0.26	1.264
Total	3	30	14.16	7.453

According to Table 4, the participants conducted an average number of 11.61 searches for the English-Thai translation. The highest number of searches were performed in the development stage, while the lowest number of searches were performed in the revision stage. In the Thai-English translation, they spent an average number of 14.16 searches. Meanwhile, the highest number of searches were performed in the development stage, while the lowest number of searches were performed in the orientation stage. These results suggest that when translating into a foreign language, the participants paid more attention to revising their translated texts by performing more searches than in the orientation stage because the target readership was non-Thai. On the other hand, when translating from a foreign language, they focused more on the orientation stage because the source text was written in English. Hence, they performed more searches in the orientation stage. The data obtained from the interviews further confirmed that most participants revised their English-Thai translations without using any resources, however, most of them preferred using resources to revise their Thai-English translations, with the most popular resources being spelling and grammar checkers.

Table 5

The Variety and Number of Searches When the Translating from a Foreign Language

Variety (Types/Categories)	Min	Max	Mean	SD
Searches for equivalents…				
at word level	0	23	5.90	5.912
at phrase level	0	27	6.74	6.914
at sentence level	0	13	5.55	4.523

at paragraph level	0	5	0.71	1.346
at the whole text level	0	1	0.06	0.250
Searches for back translation…				
at phrase level	0	1	0.03	0.180
at sentence level	0	1	0.03	0.180
at paragraph level	0	1	0.03	0.180
at the whole text level	0	2	0.13	0.428
Searches for definitions	0	36	4.68	7.040
Searches for synonyms	0	2	0.06	0.359
Searches in context	0	5	0.16	0.898
Searches for background knowledge	0	7	2.03	2.041
Searches for word spelling	0	6	1.40	1.545
Searches for images	0	2	0.13	0.499
Total	1	66	27.74	15.552

Table 5 shows the 15 types of searches that were used in English-Thai translation, and the overall mean score of search variety was 27.74. This data was obtained from the Camtasia recordings of the participants' onscreen activities, for example, when they used search engines, visited websites, and accessed online dictionaries. After that, it was categorized according to the search type. Searches for equivalents at the phrase level ranked first out of all the search types, followed by searches for equivalents at the word and sentence levels. These results indicate that the participants struggled to translate the English task at the phrase, word, and sentence levels the most. Searches for equivalents took place when participants used resources in two languages, specifically their native language and the target foreign language, to search for equivalents in terms (Kuznik, 2017). Under this search category, searches for equivalents at the whole text level, or using MT to translate the whole task, were conducted the least. These results are in line with those obtained from the interviews in which the participants were concerned about not knowing the meanings of words and their Thai equivalents and how to arrange English sentences in the Thai text.

Table 6

The Variety and Number of Searches When the Translating into a Foreign Language

Variety (Types/Categories)	**Min**	**Max**	**Mean**	**SD**
Searches for equivalents…				
at word level	0	39	8.58	9.215
at phrase level	0	41	12.74	10.392
at sentence level	0	5	0.71	1.371
at paragraph level	0	2	0.10	0.396
at the whole text level	0	1	0.10	0.301
Searches for back translation…				
at word level	0	5	0.77	1.606
at phrase level	0	13	3.10	3.859
at sentence level	0	11	0.94	2.294
at paragraph level	0	3	0.26	0.682
at the whole text level	0	6	0.55	1.312
Searches for definitions	0	13	1.61	2.871
Searches for synonyms	0	8	0.29	1.442
Searches in context	0	13	1.42	2.861
Searches for background knowledge	0	10	1.06	2.112

Searches for word spelling	0	11	2.29	2.747
Searches for images	0	10	0.35	1.799
Searches for grammar usage	0	1	0.03	0.180
Total	5	74	34.90	19.118

According to Table 6, 17 types of searches were used in the Thai-English translations, with an overall mean score for search variety of 34.90. Of all the search types, searches for equivalents at the phrase level were used the most, followed by searches for equivalents at the word level, and searches for back translations at the phrase level. These results were further supported by the interview results which revealed the participants' concerns over not knowing the meanings of words and their Thai equivalents, as well as English Grammar incompetence.

In summary, the results from Tables 5 and 6 revealed the participants' tendencies to use a wider variety of searches and back translation in their Thai-English translations, thus implying that it has a more complex nature than translating into a foreign language.

The Relationship between the Novice Translators' Instrumental Competence and the Acceptability of Their Solutions to Translation Problems When Translating from and into a Foreign Language

To find out if the number of resources used, the total time spent on searches, the number of searches, and the variety of searches carried out by the novice translators correlated with the acceptability of their solutions to the RPs, the data from the participants' screen recordings was transcribed into numbers and analyzed using Pearson's Correlation Coefficients.

Table 7

The Relationship between the Number of Resources Used and the Acceptability of the Participants' Solutions to Translation Problems When Translating from and into a Foreign Language

Translation	**Mean**	**SD**	**Pearson correlation (r)**	**p-value**
Translating from a foreign language				
The number of resources used	4.84	2.282	-.193	.299
Solutions to the RPs	0.39	0.102		
Translating into a foreign language				
The number of resources used	6.97	3.167	.274	.136
Solutions to the RPs	0.65	0.146		

*p-value < .10

According to Table 7, the mean score for the number of resources used in their English-Thai translations was 4.84 and the mean acceptability score was 0.39. However, in their Thai-English translations, the mean score for the number of resources used by novice translators was 6.97, and the mean acceptability score was 0.65. When testing the two variables (the number of resources used and the acceptability score), no correlation was discovered in either type of translation (English-Thai translation: r = -.193, p-value = .299; Thai-English translation: r = .274, p-value = .136). In other words, the number of resources used when translating from and into a foreign language did not determine the acceptability score of the RPs.

Table 8

The Relationship between the Total Time Taken for Searches and the Acceptability of the Participants' Solutions to Translation Problems When Translating from and into a Foreign Language

Translation	Mean	SD	Pearson correlation (r)	p-value
Translating from a foreign language				
The total time taken on searches	04:03	02:00	-.286	.119
Acceptability scores	0.39	0.102		
Translating from a foreign language				
The total time taken on searches	04:42	03:40	.233	.208
Acceptability scores	0.65	0.146		

*p-value < .10

According to Table 8, the mean for the total time spent by novice translators on their English-Thai translations was 04:03 minutes, and the mean acceptability score was 0.39. In their Thai-English translations, the mean of the total time spent on the translation process was 04:42 minutes, while the mean acceptability score was 0.65. After testing the two variables (the total time spent and the acceptability score), no correlations related to either type of translation were found (English-Thai translation: r = -.286, p-value = .119; Thai-English translation: r = .233, p-value = .208). More precisely, the amount of time spent on searches in either of the translation processes was not related to the acceptability scores of novice translators.

Table 9

The Relationship between the Number of Searches Carried Out and the Acceptability of the Participants' Solutions to Translation Problems When Translating from and into a Foreign Language

Translation	Mean	SD	Pearson correlation (r)	p-value
Translating from a foreign language				
The number of searches carried out	11.61	6.647	-.137	.461
Acceptability scores	0.39	0.102		
Translating from a foreign language				
The number of searches carried out	14.16	7.452	-.128	.493
Acceptability scores	0.65	0.146		

*p-value < .10

Table 9 revealed that the mean number of searches was 11.61, and the mean acceptability score was 0.39 for the English-Thai translations, while the mean number of searches in the Thai-English translations was 14.16, and the mean acceptability score was 0.65. After testing the two variables (the number of searches carried out and the acceptability score), no correlation between the two variables was discovered in either type of translation (English-Thai translation: r = -.137, p-value = .461; Thai-English translation: r = -.128, p-value = .493). Thus, it was concluded that the number of searches carried out did not affect the acceptability scores of the RPs.

Table 10

The Relationship between the Variety of Searches Carried Out and the Acceptability of the Participants' Solutions to Translation Problems When Translating from and into a Foreign Language

Translation	Mean	SD	Pearson correlation (r)	p-value
Translating from a foreign language				
The number of searches carried out (Top three search varieties)	18.19	13.347	-.023	.904
Acceptability scores	0.39	0.102		
Translating from a foreign language				
The number of searches carried out (Top three search varieties)	24.42	17.651	.148	.426
Acceptability scores	0.65	0.146		

*p-value < .10

According to Table 10, the mean score of the top three search varieties used for English-Thai translation was 18.19, and the mean acceptability score was 0.39. However, the mean score for the top three search varieties used in the Thai-English translations was 24.42, and the mean acceptability score was 0.65. After testing the two variables (the variety of searches carried out and the acceptability score), there was no correlation between the two variables in either type of translation (English-Thai translation: r = -.023, p-value = .904; Thai-English translation: r = .148, p-value = .426). It could thus be stated that the variety of searches did not influence the acceptability scores.

Discussion

The results reported in the previous section reveal some significant issues beneficial for translation pedagogy and stakeholders. First, most novice translators showed their preference for electronic resources over printed ones when given a choice, thus indicating the increasing popularity of electronic resources in the translation process. This phenomenon was also seen in the studies by Riabroi (2016), Shih (2017), and Sycz-Opoń (2019), in which novice translators preferred electronic resources. Although the role of printed resources was still noticeable in this study, there were only a few uses of them by a small number of novice translators in the orientation and development stages of their English-Thai translation process and in the development stage of their Thai-English translation process. However, the number of usages of printed resources was far lower in comparison to the frequency of use of electronic resources. Even more surprisingly, printed resources were never used in the revision stage of either type of translation, unlike electronic resources that were used in every stage of the translation process. This, therefore, implies that novice translators found electronic resources more useful for revising their translated texts.

The declining popularity of printed resources among novice translators is in line with what is happening in the translation industry. In today's translation profession, electronic resources, such as search engines, online dictionaries, term banks, MT, and CAT tools, are widely used for different types of translation. Additionally, in the revision stage of the translation process, tools like grammar and spelling checkers are even more useful to ensure the quality of a translated text, particularly one translated into a foreign language (Bowker, 2023). For this reason, electronic resources are by far more functional and serve to support a broader range of translation activities. The novice translators' preference for electronic resources in this study confirms that they are interested in and ready to use the resources. Consequently, it will not be difficult for translation teachers to introduce more electronic resources to students, as well as point out their functions

and benefits. To effectively acquire and develop instrumental competence, Rodríguez-Inés (2010) strongly suggests the incorporation of electronic resources into classroom practice using a task-based approach.

Of all the electronic resources available, the prominent role of MT in the translation process is indisputable in this study, as it is one of the most popular tools used for translating from and into a foreign language for various purposes. For example, its use for translating texts at the word, phrase, sentence, and discourse levels, as well as back translation confirms the novice translators' recognition of MT's functions and value. However, when looking at translating into a foreign language, these results are slightly different from Kate-Phan and Sripetpun's (2016) study that reported novice translators' mostly used MT for translating at the word level, followed by the sentence, paragraph, and essay levels. Meanwhile, this study not only found that novice translators used MT for the same purposes but for back translation as well. Although performing back translations in this study may not determine translation quality, the novice translators' use of MT for back translation suggests that they are aware of its utility for comparing the output with the input. However, in the professional context, Son (2018) points out that using back translation as a translation quality tool is not a good practice nowadays. He posits that back translation should be used as a documentation tool to generate translation outputs for translators to make decisions on whether to fine-tune a translation to enhance its naturalness. It is for this reason that instructors must ensure that novice translators understand back translation's true usefulness and are not mistaken about it.

Additionally, while most novice translators in this study only used one MT service, primarily GT, in the translation process, some used more than one MT service, comparing their outputs before deciding on the best output for a particular context. This reveals the unique behaviors of some novice translators, their attempts to solve translation issues and their awareness of each MT service's capability. On the other hand, it could also mean that most novice translators were unaware of what each MT service can do to facilitate the translation process, or the translation time made it difficult for them to use more than one MT service. The popularity of MT among Thai novice translators, particularly in translating from a foreign language, contrasts Shih's (2017) and Sycz-Opoń's (2019) results however, which found that dictionaries were the most preferred tools among Chinese and Polish novice translators, respectively. This contrasting result may imply that Thai novice translators view MT as an easier and more convenient tool to use which helps save translation time in comparison to using dictionaries. Moreover, as MT can be used to translate a single word, chunks of words, sentences, or paragraphs, the use of dictionaries is unnecessary. Despite its strengths, MT also has some downsides. To ensure the full potential of MT, users must acquire MT literacy, or, in simple terms, the necessary skills and knowledge for using it (Bowker, 2023). Without MT literacy, MT could cause more translation problems than it solves. In Vidhayasai et al. (2015) study, for example, GT was used to translate an English text about the terms and conditions on an airline's official website, and the results showed that it caused errors at the lexical, syntactic, and discursive levels. To minimize such errors, GT should be used with caution, as suggested in the studies of Al-Tuwayrish (2016) and Vidhayasai at al. (2015).

Another issue discussed herein is that the number of resources used, the total time spent on searches, the number of searches carried out, and the variety of searches carried out in the two translation processes did not correlate with the acceptability scores of the RPs. The results of this study suggest that novice translators may acquire the knowledge of how resources can help them translate but cannot select the right ones. As a result, they still need to be trained on the following aspects: i) the types and purposes of resources available; ii) the editing/cross-checking process that includes techniques for cross-checking accuracy, and so on. Kuznik & Olalla-Soler's (2018) study on the acquisition of instrumental competence of translation students produced results with similar outcomes where the use of more translation resources did not ensure the quality of the solutions to translation problems. Kuznik (2017), however, reported contrasting results in an experimental study comparing language teachers and professional translators. In the study, the translator group tended to use a higher number of electronic resources, spent more time on searches, and carried

out a higher number of searches, on the condition that they were able to effectively use the available resources. According to this result, instrumental competence comprises the translator's recognition of the availability and functions of translation resources and their ability to use them effectively. Resources may be less necessary for expert translators as their language proficiency level is high, whereas novice translators still need them when translating works. To develop the instrumental competence of novice translators, translation teachers must train them how to use a variety of translation resources and the functions of each one, and provide them with various translation practices to allow for more resource training to enhance their effectiveness.

Last, directionality requires a different degree of instrumental competence. In this study, more types and numbers of resources, more time on searches, a higher number of searches carried out, and a broader variety of searches were used when translating a text into a foreign language. These results imply that translating into a foreign language is a more complex activity. This seems to confirm Hatim's (2014) point that translating into a mother tongue is considered the natural order, or the normal direction, and Hurtado Albir's (2017) conclusion in that directionality affects the degree of TC. The results of this study were also congruent with PACTE's (2003) results that pointed to the language teachers' and professional translators' tendency to use more translation resources when translating into a foreign language. Due to its unnatural direction, training novice translators to use translation resources when translating texts into a foreign language should be more intense. As pointed out by Hatim (2014), a competent translator should be able to translate texts regardless of directionality to serve the present job's demands.

Conclusions and Implications

Instrumental competence is not simply recognizing the existence of translation resources but includes knowing which types of them can be used and how to use them in the translation process. Therefore, the role of teachers is to teach their students instrumental skills, in addition to translation skills. With proper and adequate guidance from translation teachers, students can develop the instrumental competence required by today's translation industry. Furthermore, more translation and language programs should consider incorporating TC training into their syllabi to prepare students for the translation profession and discard the conventional method of product-based translation teaching.

The replication of PACE's TC model in this study proves its repeatability in the Thai context, hence providing greater insights into TC and novel results among translation studies. It will be challenging for the model to be repeated in other contexts to explore TC, particularly in other under-researched language combinations. It will also be interesting to see if instrumental competence correlates with other types of competencies like strategic competence. Other competencies which are indispensable for the translation profession also deserve equal attention and further investigation.

Limitations of the Study

Notwithstanding the new insights into novice translators' instrumental competence, this study revealed some possible limitations. First, since the participants in this study were recruited on a voluntary basis, the sample size was limited, and the results of the study can only be applied to this specific circumstance. Second, the Covid-19 pandemic that was ongoing during the study's data collection process possibly prevented additional volunteers from participating because of a desire to avoid face-to-face communication with the researchers. Lastly, the duration of the study was not long enough to obtain complete data about the participants' longer-term development of their instrumental competence up through their graduation from their program of study.

About the Authors

Nantana Sittirak: A Ph.D. candidate in English Language Studies at Thammasat University. She works at Prince of Songkla University, Trang Campus, Thailand. Her research interests are translation, intercultural communication, and ELT.

Sirirat Na Ranong: An assistant professor in the Department of English, Faculty of Liberal Arts, Thammasat University. She has published articles and book chapters on applied linguistics and translation. Her research interests are second language acquisition, translation, and World Englishes.

References

Alshargabi, E., & Abdu Al-Mekhlafi, M. (2019). A survey of the Yemeni translation market needs. *Journal of Social Studies, 25*(1), 113-131. https://doi.org/10.20428/JSS.25.1.5

Al-Tuwayrish, R. (2016). An evaluative study of machine translation in the EFL scenario of Saudi Arabia. *Advances in Language and Literary Studies, 7(*1), 5-10.

Aubakirova, K.A. (2016). Nurturing and testing translation competence for text-translating. *International Journal of Environmental* & *Science Education, 11*(11), 4639-4649.

Bowker, L. (2023). *De-mystifying translation*. Routledge.

Chang, C. Y. (2009). *Testing applicability of eye-tracking and fMRI to translation and interpreting studies: An investigation into directionality* [Doctoral dissertation, University of London]. University of London Research Repository. https://spiral.imperial.ac.uk/bitstream/10044/1/11409/2/Chang-CY-2009-PhD-Thesis.pdf

Colina, S., & Venuti, L. (2017). A survey of translation pedagogies. In L. Venuti (Ed.). *Teaching translation*: *Programs, courses, pedagogies* (pp. 203-215). Routledge.

Creswell, J. (2012). *Education research: Planning, conducting, and evaluating quantitative and qualitative research*. Pearson.

Eser, O. (2014). Setting learning objectives in translation at the department of foreign language teaching through the concept of competence. *Turkish Studies*, *9*(5), 943-951.

Göpferich, S. (2009). *Towards a model of translation competence and its acquisition: The longitudinal study TransComp* [PDF file]. https://pdfs.semanticscholar.org/254d/069d13b230faf92f7e04ffab32d5473df633.pdf

Hatim, B. (2014). *Teaching and researching translation.* (2nd ed.). Routledge.

Hurtado Albir, A. (2015). The acquisition of translation competence. Competences, tasks, and assessment in translator training. *Meta, 60*(2), 256–280. https://doi:10.7202/1032857ar

Hurtado Albir, A. (2017). Translation and translation competence. In A. Hurtado Albir (Ed.), *Researching translation competence by PACTE Group* (pp. 3-33). John Benjamins.

Károly, A. (2011). Exploring learners' needs and expectations: Translating EU texts in an English bachelor's program at a Hungarian college. *WoPaLP, 6*, 58-85.

Kate-Phan, K., & Sripetpun, W. (2016). Attitudes, behaviors and problems of English major students in using "Google Translate". *Journal of Liberal Arts, Prince of Songkla University, Hat Yai Campus, 8* (1), 79-96.

Kazuharu, Y. (2017). A bibliometric analysis of Master's theses relevant to Translation Studies in Thailand. *International Journal of East Asian Studies, 21*(2), 89-105.

Kelly, D. (2010). Curriculum. In Y. Gambier, & L.V. Doorslaer (Eds.), *Handbook of translation studies* (pp. 87-93). John Benjamins.

Kuznik, A. (2017). Use of instrumental resources. In A. Hurtado Albir (Ed.), *Researching translation competence by PACTE Group* (pp. 219-241). John Benjamins.

Kuznik, A., & Olalla-Soler, C. (2018). Results of PACTE group's experimental research on translation competence acquisition.The acquisition of the instrumental sub-competence. *Across Languages and Cultures, 19*(1), 19-51. https://doi: 10.1556/084.2018.19.1.2

Neunzig, W. (2017). Methodological background. In A. Hurtado Albir (Ed.), *Researching translation competence by PACTE Group* (pp. 43-60). John Benjamins.

OpenAI. (2023, March 26). *Better language models and their implications*. Introducing Chat GPT. https://openai.com/research/better-language-models

PACTE. (2000). Acquiring translation competence: Hypotheses and methodological Problems in a research project. In A. Beeby, D. Ensinger, & M. Presas (Eds.), *Investigating translation* (pp.99-106). John Benjamins.

PACTE. (2003). Building a translation competence model. In F. Alves (Ed.), *Triangulating translation: Perspectives in process-oriented research* (pp.43-66). John Benjamins.

PACTE. (2009). Results of the validation of the PACTE translation competence model: Acceptability and decision making. *Across Languages and Cultures, 10*(2), 207-230.

PACTE. (2017). Developing the research design. In A. Hurtado Albir (Ed.), *Researching translation competence by PACTE Group* (pp. 63-80). John Benjamins.

Riabroi, P. (2016). *The use of team-based learning in the development of translator competence in a translation classroom* [Doctoral dissertation, Thammasat University]. TU Digital Collections. https://digital.library.tu.ac.th/tu_dc/frontend/Info/item/dc:89635

Rodríguez-Inés, P. (2010). Electronic corpora and other information and communication technology tools, *The Interpreter and Translator Trainer, 4(*2), 251-282. https://doi.org/10.1080/13556509.2010.10798806

Schäffner, C., & Adab, B. (2000). *Developing translation competence*. John Benjamins Publishing Company.

Shih, C.Y. (2017) Web search for translation: an exploratory study on six Chinese trainee translators' behaviour, *Asia Pacific Translation and Intercultural Studies, 4*(1), 50-66. https://doi.org/10.1080/23306343.2017.1284641

Son, J. (2018). Back translation as a documentation tool. *Translation & Interpreting, 10*(2), 89-100. https://doi.org/10.12807/ ti.110202.2018.a07

Suksiripakonchai, W. (2017). Teaching translation studies and the effect on students' translation Approaches. *The New English Teacher, 11*(11), 36-169.

Sycz-Opoń, J. (2019). Information-seeking behaviour of translation students at the University of Silesia during legal translation – an empirical investigation. *The Interpreter and Translator Trainer, 13*(1), 1-25. https://doi.org/10.1080/1750399X.2019.1565076

Toudic, D., & Krause, A. (2017). *European master's in translation competence framework 2017* [PDF file]. https://ec.europa.eu/info/sites/info/files/emt_competence_fwk_2017_en_web.pdf

Venuti, L. (2017). Translation, interpretation, and the humanities. In L.Venuti (Ed.). *Teaching translation*: *Programs, courses, pedagogies* (pp. 1-14). Routledge.

Vidhayasai, V., Keyuravong, S., & Bunsom, T. (2015). Investigating the use of Google Translate in "Terms and Conditions" in an airline's official website: Errors and implications. *PASAA, 49*, 137-169.

Wongranu, P. (2017). Errors in translation made by English major students: A study on types and causes. *Kasetsart Journal of Social Sciences, 38*, 117-122. http://dx.doi.org/10.1016/j.kjss.2016.11.003